THE COUNCIL FOR TOBACCO RESEARCH – U.S.A., INC.

110 EAST 59TH STREET
NEW YORK, N. Y. 10022
(212) 421-8885

FEB 1 1974

Application for Research Grant

(Use extra pages as needed)

Date: 1/29/74

1. Principal Investigator (give title and degrees):
Merton S. Honeyman, B.A., M.S., Ph.D.
Director of Research, Office of Mental Retardation
Barbara Christine, B.S., M.D., Chief, Chronic Disease Control Section

2. Institution & address:
Connecticut State Department of Health
79 Elm Street
Hartford, Connecticut 06115

3. Department(s) where research will be done or collaboration provided:
Chronic Disease Control Section
Office of Public Health
Connecticut State Department of Health

4. Short title of study:
Environmental influences on like sexed twins

5. Proposed starting date: July 1, 1974

6. Estimated time to complete: 3 years

7. Brief description of specific research aims:
The specific aims of this project are to determine the morbidity and mortality experience of twins (25-59 years of age) in relation to their environmental exposure history. Smoking, alcohol consumption, and if possible air pollution exposure histories will be the environmental variables studied. To date two large scale twin studies (Karolinska Institute, Stockholm and the National Research Council) have investigated these variables but the results have not been significant due to small numbers in certain cells. It is the aim of this project to use a questionnaire very similar to that used by the two previous studies so that the data may be pooled in order to obtain sufficient numbers.

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8. Brief statement of working hypothesis:

There is no difference in the incidence of morbidity of monozygotic and dizygotic twin pairs discordant for smoking history.

There is no difference in the incidence of morbidity between monozygotic and dizygotic co-twins, discordant for smoking history.

9. Details of experimental design and procedures (append extra pages as necessary)

The Connecticut Twin Registry contains a listing of all multiple births in Connecticut since July 1, 1897. Addresses of twins living in Connecticut are updated periodically, the last update was done in 1968.

In order to obtain the current addresses of a minimum of 2000 pairs of like-sexed twins, the 5440 pairs of like-sexed twins age 25-59 born in Connecticut who survived infant mortality will be searched for. This search involves use of city directories, obituary columns, etc. These resources have proved very successful in the past and it is estimated that at least 60% of the 5440 like-sexed pairs will be located with both living in Connecticut. If one is living in Connecticut, his or her twin's address can be obtained from this source.

Once the twins have been located a mail questionnaire (Appendix A) will be sent to each twin with a covering letter explaining the study as a part of an international collaborative effort. The questionnaire is a modification of the questionnaire used by the Karolinska Institute, Stockholm and the National Research Council (the Veterans Administration Twin Registry). For non-response to the first mailing, a second mailing will take place, and if this fails to obtain a response a telephone call to obtain cooperation will follow. The Karolinska Institute reports obtaining better than an 80% response rate utilizing this format.

The initial phase of updating addresses will take approximately one year to complete. Mailings can proceed as addresses are obtained. All mailings and telephone contacts should be completed by the end of the second year.

Twin pairs discordant for smoking histories and a sample of twin pairs concordant for smoking or non-smoking will be asked to have a physical examination. A subcontract will be written with the Out-Patient Department of Hartford Hospital for these examinations. A complete history will be taken and a standard physical examination given including an electrocardiogram, blood studies, and appropriate x-rays.

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9. Details of experimental design and procedures (Cont.)

The data collected will then be analyzed for differences between co-twins and between monozygotic and dizygotic concordant and discordant pairs.

Long term follow-up on all twin pairs will be maintained and mortality data will be obtained from death certificates and hospital records.

Zygosity determination will be made by use of the questionnaire method using the question, "Were you as alike as two peas in a pod when you were growing up?" This question has been shown to be as good as blood group analysis on large populations, with accuracy approaching 95%.

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10. Space and facilities available (when elsewhere than item 2 indicates, state location):

Necessary space is available in the Chronic Disease Control Section for the purposes of this project.

11. Additional facilities required:

None

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12. Biographical sketches of investigator(s) and other professional personnel (append):

13. Publications: (five most recent and pertinent of investigator(s); append list, and provide reprints if available).

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12.

Curriculum Vitae

Merton S. [redacted] Ph.D.
Address: REDACTED
Marital Status: [redacted]
Born: REDACTED REDACTED
Present Position and Employer: Director, Division of Research
Office of Mental Retardation
Connecticut State Department of Health

Education

B.A.	University of Connecticut, Storrs, Connecticut	Zoology	REDACTED
M.S.	University of Connecticut, Storrs, Connecticut	Zoology	REDACTED
Ph.D.	Ohio State University, Columbus, Ohio	Zoology (Genetics)	

Additional Training and Experience

Yale University School of Medicine	Postdoctoral Fellow	1954-57
Teachers College of Connecticut	Instructor - Evening College	1954-55
Hillyer College	Adjunct Assistant Professor	1955-56
National Cancer Institute	Geneticist	1957-59
Connecticut State Department of Health	Geneticist	1959-65
University of Hartford	Adjunct Assistant Professor	1960-
Yale University School of Medicine	Lecturer in Public Health - (Human Genetics)	1961-70
Connecticut State Department of Health	Director, Division of Program Analysis and Research, Office of Mental Retardation	1966-
Manchester Community College	Lecturer in Biology	1971-

Member of World Health Organization Expert Committee on Methodology of Twin Studies held at Geneva, Switzerland October 26 - November 1, 1965. Report published in Acta. Genet. Med. Gemmell. 25:109, 1966.

Consultant to the Swedish Twin Registry, Karolinska Institute, Stockholm Sweden, May 1967.

Consultant to the Rheumatic Fever Clinic, Hadassah Medical Organization, Jerusalem, Israel on Family Study of Rheumatic Fever, November 1967.

Consultant to the Department of Medicine of Hartford Hospital and to Newington Children's Hospital.

Clinical Associate, Division of Medical Genetics, Department of Pediatric and Medical Specialties, University of Connecticut School of Medicine.

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Source: https://www.industrydocuments.ucsf.edu/docs/mmdm0000

Morton S. Honeyman, Ph.D.

Publications:

1. Crelin, E.S., and M.S. Honeyman. The Inhibition of Interpubic Ligament Formation by Progesterone in Pregnant Mice. Ant. Rec. 127:407, 1957.

2. Crelin, E.S., P.B. Wood, and M.S. Honeyman. Flexibility Changes of Pelvic Joints in Pregnant and Hormonally-Injected Mice. Ant. Rec. 127:408, 1957.

3. Crelin, E.S., and M.S. Honeyman. Pelvic Joint Changes during the Estrous Cycle in Mice. Ant. Rec. 127:408, 1957.

4. Honeyman, M.S., A Quantitative Genetic Study of a Nutritional Strain Difference in Mice. J. Heredity 48:84, 1957.

5. Greenberg, R.A., and M.S. Honeyman. Lung Cancer: A Growing Problem. Connecticut Health Bulletin 73:269, 1959.

6. Honeyman, M.S. The Connecticut Twin Registry. Connecticut Health Bulletin. 74:111, 1960.

7. Honeyman, M.S. The Recent Advances in Human Cytogenetics. Connecticut Health Bulletin. 75:83, 1961.

8. Honeyman, M.S. Genetics and Disease. Connecticut Health Bulletin. 75:191, 1961.

9. Honeyman, M.S. and E. Siker. Cystic Fibrosis of the Pancreas. Connecticut Health Bulletin. 75:275, 1961.

10. Ballar, J.C. III, M.S. Honeyman, and H. Eisenberg. Incidence and Mortality Rates for Leukemia and Lymphoma. Public Health Reports. 77:281, 1962.

11. Honeyman, M.S. The Familial Implications of Breast Cancer in Man. Connecticut Health Bulletin. 76:351, 1962.

12. Honeyman, M.S., and E. Siker. Cystic Fibrosis of the Pancreas. An Estimate of the Incidence Rate. Am. J. Hum. Genet. 17:461, 1965.

13. Wetstone, H.J., M.S. Honeyman, and R. B. McComb. Genetic Control of the Quantitative Activity of a Serum Enzyme in Man. J.A.M.A. 192:1007, 1965.

14. Eisenberg, H., M.S. Honeyman, H.S. Barrett. A Twin Family Study of Blood Pressure. Presented at the American Heart Association Annual Meeting, Atlantic City, New Jersey, October 23, 1964.

15. Honeyman, M.S., H. Eisenberg, and F.M. Foote, The Twin Study of Serum Cholesterol. Presented at the American Public Health Association Annual Meeting, New York, New York. October 6, 1964.

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16. Eisenberg, H., M.S. Honeyman, and R.B. Connelly. Trends in Female Breast Cancer. Connecticut, 1935-1959. Presented at the American Public Health Association Annual Meeting, New York, New York. October 6, 1964.

17. Foote, F.M., H. Eisenberg, and M.S. Honeyman. Trends in Cancer Incidence and Survival in Connecticut. Presented at the American Medical Association Annual Meeting, San Francisco, California. January 24, 1964.

18. Brewer, G.J., J.C. Gall, M.S. Honeyman, H. Gershowitz, R.J. Dern, C.G. Hames. Inheritance of quantitative expression of G-6-PD deficiency in heterozygous Negro females - A twin study. Clin. Res. 13:265 (abst) 1965.

19. Foote, F.M., H. Eisenberg, and M.S. Honeyman. Trends in Cancer Incidence and Survival in Connecticut. Cancer 19:1573, 1966.

20. Reznikoff, M., and M.S. Honeyman. MMPI Profiles of Monozygotic and Dizygotic Twin Pairs. J. Consult. Psych. 31:100, 1967.

21. Brewer, G.J., J.C. Gall, M.S. Honeyman, H. Gershowitz, R.J. Dern, and C.G. Hames. Inheritance of Quantitative Expression of the X-linked gene Glucose-6-phosphate Dehydrogenase Deficiency, in Heterozygous Negro Females - A Twin Study. Biochem. Genet. 1:41, 1967.

22. Shreffler, D.C., G.J. Brewer, J.C. Gall and M.S. Honeyman. Electrophoretic Variation in Human Serum Ceruloplasmin: A New Genetic Polymorphism. Biochem. Genet. 1:101-115, 1967.

23. Shreffler, D.C., G.J. Brewer, J.C. Gall, and M.S. Honeyman. Genetic Polymorphism in Human Serum Ceruloplasmin. pp. 91-92. 3rd Intern. Congr. Human Genet., Abstr. of Contrib. Papers. 1966.

24. Honeyman, M.S., H. Eisenberg, and J.T. Morrison. A Twin Study of Serum Cholesterol Level. pp. 47-48. 3rd Intern. Congr. Human Genet., Abstr. of Contrib. Papers. 1966.

25. Rappaport, H., M. Reznikoff, B.C. Glueck, M.S. Honeyman, and H. Eisenberg. Smoking Behavior in Offspring of Heart Disease Patients: A Response to Cognitive Dissonance. J. Consult. Psych. 32:494-496, 1968.

26. Honeyman, M.S., H. Rappaport, M. Reznikoff, B.C. Glueck and H. Eisenberg. Psychological Impact of Heart Disease in the Family of the Patient. Psychosomatics. 9:34-37, 1968.

27. Honeyman, M.S. and I. Gabrielson. Public Health Aspects of Genetic Screening. Birth Defects Original Article Series, Vol. IV, No. 6; Nov. 1968.

28. Finn, Fred F., Bert W. Schmickel, and Merton S. Honeyman. The Seaside Story. Connecticut Health Bulletin. 82.4 (April) 1968.

29. Honeyman, M.S. and B.W. Schmickel. Progress in Human Genetics As Related To Mental Retardation Services. Connecticut Health Bull. 83.2 (February) 1969.

30. Vandertolen, R., G.J. Brewer, M.S. Honeyman, J. Morrison, and S.W. Hoobler. A Study of Hypertension in Twins. American Heart Journal. 79:454-457, 1970.

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31. Dies, R., M. Reznikoff, M. Honeyman and C. White, Personality and Smoking Patterns in a Twin Population. J. Proj. Tech. Person., 1969, 33, 457-463.

32. Honeyman, M.S. and E. Davis. A Genetic Study of Rheumatic Fever Clustering In Families. Acta. Genet. Med. Gemellol, 1971, 20:189-198.

33. Honeyman, M.S. Sickle Cell Anemia - An Inherited Disease. Connecticut Health Bulletin, 85, 3 (March) 1971.

34. Siker, E., M.S. Honeyman, V. Bapat, A.D. Crabtree, and V. Shannon. A Sickle Cell Disease Program--Planning, Education, Genetic Counseling. Connecticut Health Bulletin. 86:255-261, 1972.

35. Reznikoff, M., G. Domino, C. Bridges, and M.S. Honeyman. Creative Abilities in Identical and Fraternal Twins. Behavior Genetics. In Print 1973.

36. Reznikoff, M., G. Domino, C. Bridges and M.S. Honeyman. Perceptions of Alikeness and Attitudes toward Being A Twin: Comparison of Identical and Fraternal Twin Pairs. Perceptual and Motor Skills. 37:103-106, 1973

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CURRICULUM VITAE

Barbara W. Christian, M.D.
Date of Birth: REDACTED
Place of Birth: REDACTED
Soc. Sec. No. REDACTED

Education

Skidmore College, Saratoga, New York - Bachelor of Arts degree REDACTED

Albany Medical School, Albany, N.Y. - Doctor of Medicine degree REDACTED

Waterbury Hospital, Waterbury, Conn. - REDACTED

Fellow in New Haven Rheumatic Fever Clinic, Grace-New Haven Hospital, New Haven, Conn. -

Fellow in Cardio-Respiratory Laboratory, Hartford Hospital, Hartford, Conn. - REDACTED

Yale School of Public Health, New Haven, Conn. - REDACTED
Master in Public Health degree 1964

Employment

Assistant in General Practice to Dr. B. Walker, Torrington and Cornwall, Connecticut - 1952-1952

Practice in General Medicine, Torrington, Connecticut - 1958-1960

Chief, epidemiology section, Conn. State Dept. of Health - Oct. 1964 to March 15, 1968

Director of Health, Greenwich, Conn. - May 1968 to July 1968.

Chief, epidemiology section, Conn. State Dept. of Health - August 9, 1968 to October 1, 1968

Chief, chronic disease control section - Conn. State Dept. of Health - November 1968 to present

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Barbara W. Christine

Publications

1. _____, and staff of the Chronic Disease Control Section: Cancer in Connecticut 1965, Monograph published 1969.

2. _____, Sullivan, P., and Connelly, R.: Cancer in Connecticut 1965. Connecticut Health Bul., 84:5, May 1970.

3. _____, Sullivan, P., Connelly, R., Foote, F.: Cancer incidence, mortality and survival in Connecticut during the 1960's. Connecticut Medicine, 34:8, 564-569, Aug. 1970.

4. _____, Sullivan, P.D.: Effects of cigarette smoking on Connecticut residents. Connecticut Health Bul. 85:1, Jan. 1971

5. _____, Flannery, J., Connelly, R.: Cancer in Connecticut 1967. Conn. Health Bul. 85:1, Feb. 1971.

6. _____, Flannery, J., Sullivan, P.: Cancer in Connecticut 1968. Conn. Health Bul. 85:11, Nov. 1971.

7. Shanmugaratnum, K., Muir, C.S., Tow, S.H., Cheng, W.C., Christine, B., and Pedersen, E.: Rates per 100,000 births and incidence of choriocarcinoma and malignant mole in Singapore Chinese and Malays - comparison with Conn., Norway and Sweden. Inter. J. of Cancer:8, 165-175 (1971).

8. Schoenberg, B.S., Christine, B.: Neoplasms of the brain and cranial meninges - A study of incidence, epidemiological trends, and survival. Presented at the 22nd annual meeting of the Am. Acad. of Neurology, April 30-May 2, 1970.

9. Connelly, R.R., Christine, B.: Cancer following infectious mononucleosis. Presented at the 10th International Cancer Congress in May 1970.

10. Groff, W.H., Pitt, T.H., Christine, B.W.: Cervical cancer and social rank in metropolitan Connecticut. Agricultural Experiment Station Bulletin. Research Report 34, May 1971.

11. Cutler, S.J., Christine, B., Barclay, T.H.C.: Increasing incidence and decreasing mortality rates for breast cancer. Cancer 28:6, Dec. 1971.

12. Sullivan, P.D., Christine, B.W., Connelly, R.R., and Barrett, H.: Analysis of trends in age adjusted incidence rates of cancer for ten major sites, 1935-1965. The Am. J. of Pub. Health 62:8, 1065-1071, August 1971.

13. _____, Flannery, J.T., Sullivan, P.D.: Cancer in Connecticut 1969. Conn. Health Bul. 86:4, April 1972.

14. _____, Sullivan, P.D., Flannery, J.T.: Cancer in Connecticut 1970. Conn. Health Bul. 86:11, Nov. 1972.

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15. Krysciо, R.J., Myers, M.H., Prusiner, S.T., Heise, H.W., Christine, B.W.: A study of the space-time distribution of Hodgkin's disease in Connecticut, 1940-69. To be published.

Source: https://www.industrydocuments.ucsf.edu/docs/mmdm0000

16. O'Conor, G.T., Correa, T., Christine, B., Axtell, L., Myers, M.: Hodgkin's disease in Connecticut: Histology and age distribution. To be published in J. of Nat. Cancer Inst.

17. _____, Groff, W., Pitt, T., and Chapple, M.: The relationship of incidence of cervical cancer and socioeconomic status in seven cities, 1959-1964. Connecticut Medicine, 36:2, Feb. 1972.

18. _____, Chapple, M., Nadeau, D.: Cancer of the cervix in Connecticut. Connecticut Medicine 36:12, 669-680, Dec. 1972.

19. Andrews, D., Christine, B.: Leukemia surveillance in Connecticut 1970. To be published in Conn. Health Bul. 87:4, April 1973.

20. Kuehn, P.G., Christine, B., and Coley, G.M.: Carcinoid tumors - A study of 550 cases. To be presented at the 1973 spring meeting of the James Ewing Society and published in Cancer.

21. Curnen, M.G. McCrea, Vaima, A., Christine, B., and Turgeon, L.: Childhood leukemia and maternal influenza: Are they related? To be presented at the meeting of the Society of Epidemiologic Research in Winnipeg, Canada, June 21-23, 1973.

22. Odell, R., Sullivan, P., Christine, B.: Mortality from diseases of the respiratory system - Conn. 1960-1971. Conn. Health Bul. 87:2, Feb. 1973.

23. _____, Sullivan, P., Flannery, J.: Cancer in Connecticut 1971, Conn. Health Bul. 87:8, August 1973.

24. Schoenberg, B.S., Fraumeni, J.F. Jr., Greenberg, R.A., Christine, B.: Multiple primary malignancies in Connecticut 1935-1964: Clues to etiology. To be published in the Proceedings of the Perugua Conference on Multiple Primary Malignant Tumors. Submitted 5-73.

25. _____, Sullivan, P., Flannery, J.: Cancer in young Connecticut adults, aged 15-29 years, 1950-1969. To be published in the proceedings of the Second International Symposium on Cancer Detection and Prevention.

26. Axtell, L., Myers, M., Christine, B., and Linden, G.: Trends in survival and classification for leukemia patients diagnosed 1940-69. To be submitted to Blood.

27. Flannery, J., Christine, B., Foote, F.: Problems of maintaining and updating a tumor registry. Presented at the International Association of Cancer Registry Symposium in Dusseldorf, Germany, April 6, 1973.

28. Honeyman, M., Christine, B., Wetstone, S.: Investigation of cancer in mothers of retarded individuals.

29. Cramer, D.W., Cutler, S.J., Christine, B.: Trends in the incidence of endometrial cancer in the United States.

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13. Publications:

Merton S. Honeyman, Ph.D.

Wetstone, H.J., M.S. Honeyman, and R.B. McComb. Genetic Control of the Quantitative Activity of a Serum Enzyme in Man. J.A.M.A. 192:1007, 1965.

Rappaport, H., M. Reznikoff, B.C. Glueck, M.S. Honeyman, and H. Eisenberg. Smoking Behavior in Offspring of Heart Disease Patients: A Response to Cognitive Dissonance. J. Consult. Psych. 32:494-496, 1968.

Honeyman, M.S., H. Rappaport, M. Reznikoff, B.C. Glueck and H. Eisenberg. Psychological Impact of Heart Disease in the Family of the Patient. Psychosomatics. 9:34-37, 1968.

Dies, R., M. Reznikoff, M. Honeyman and C. White. Personality and Smoking Patterns in a Twin Population. J. Proj. Tech. Person., 1969, 33, 457-463.

Reznikoff, M., G. Domino, C. Bridges, and M.S. Honeyman. Creative Abilities in Identical and Fraternal Twins. Behavior Genetics, Vol. 3, No.4, 1973.

Barbara Christine, M.D.

Christine, B., Flannery, J.T., Sullivan, P.D.: Cancer in Connecticut 1969. Conn. Health Bul. 86:4, April 1972.

Christine, B., Sullivan, P.D., Flannery, J.T.: Cancer in Connecticut 1970. Conn. Health Bul. 86:11, Nov. 1972.

Christine, B., Groff, W., Pitt, T., and Chapple, M.: The relationship of incidence of cervical cancer and socioeconomic status in seven cities, 1959-1964. Connecticut Medicine, 36:2, Feb. 1972.

Christine, B., Chapple, M., Nadeau, D.: Cancer of the cervix in Connecticut. Connecticut Medicine 36:12, 669-680, Dec. 1972.

Christine, B., Sullivan, P., Flannery, J.: Cancer in Connecticut 1971, Conn. Health Bul. 87:8, August 1973.

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14. First year budget:

A. Salaries (give names or state "to be recruited")	% time	Amount
Professional (give % time of investigator(s) even if no salary requested)		
Merton S. Honeyman, Ph.D.	10	REDACTED
Barbara Christine, M.D.	5	REDACTED
Geneticist (Supervisor)	100	REDACTED
"to be recruited"		
Technical		
2 Clerk II	100	REDACTED
1 Typist II	100	REDACTED
Fringe Benefits 30.15%		REDACTED
	Sub-Total for A	REDACTED
B. Consumable supplies (by major categories)		
Printing		2,000
Office Supplies		500
	Sub-Total for B	2,500
C. Other expenses (itemize)		
Postage		2,000
Telephone		500
Travel		500
	Sub-Total for C	3,000
	Running Total of A + B + C	47,244
D. Permanent equipment (itemize)		
1 Electric Typewriter		400
1 5 Drawer File Cabinet		85
1 Electronic Calculator		125
	Sub-Total for D	610
E. Indirect costs (15% of A+B+C)	E	7,086
15. Estimated future requirements:	Total request	58,040

	Salaries	Consumable Suppl.	Other Expenses	Permanent Equip.	Indirect Costs	Total
Year 2	R	0	25,500	-	10,475	80,306
Year 3	R	500	25,500	-	10,803	82,825

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16. Other sources of financial support:
List financial support from all sources, including own institution, for this and related research projects.

CURRENTLY ACTIVE

Title of Project	Source (give grant numbers)	Amount	Inclusive Dates
Program Listing and Client Evaluation	HEW-SRS 56-P-05235/1-01	$66,774	6/1/73 - 5/31/74
Cancer End Results Evaluation	NCI NO1 CP 43203	$290,213	8/1/73 - 6/30/74
Block Grant	Federal Funds 314d	$161,715	7/1/73 - 6/30/74

PENDING OR PLANNED

Title of Project	Source (give grant numbers)	Amount	Inclusive Dates

It is understood that the investigator and institutional officers in applying for a grant have read and accept the Council's "Statement of Policy Containing Conditions and Terms Under Which Project Grants Are Made."

Checks payable to
necticut State Department of Health

Mailing address for checks
Business Office - 79 Elm Street
Hartford, Connecticut 06115

Principal investigator
Typed Name Merton S. Honeyman, Ph.D.
Signature [signature] Date 1/29/74
Telephone REDACTED
( ) Area Code Number Extension

Responsible officer of institution
Typed Name Harold S. Barrett, M.D.
Title Deputy Commissioner
Signature Harold S. Barrett, M.D. Date 1/29/74
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Area Code Number Extension

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